

DERWENT PUBLICATIONS LTD.

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BASFAG *DT 2916-356
23.04.79-DI-916356 (13.11.80) C08g-59/10 C08g-73/02
Coat r soluble polyether amine prep. - by reacting di- or poly-
amine(s) with chlorohydrin ether(s) of alcohol(s) or glycerol, used for
d watering agents for paper

Water soluble polyetheramines are prep. by (i) condensing
(a) di- or polyamines (I) contg. 2-10N atoms with (b)
chlorohydrin ethers (II) (prep. from 1 mol. divalent 2-5C
alcohol, its ethoxylated adduct contg. up to 18 ethylene
oxide units, glycerol or polyglycerol contg. up to 15 glycer-
ol units and 2-8 mol. epichlorohydrin), at 110-200°C in
polar, water miscible solvents in the absence or extensive
exclusion of water, (iii) adding an alkali(ne earth) metal base
to n utralise ≥20% of the HCl formed by the condensn. and
(iii) post-condensing. (I) is used in an amt. of 0.6-2.5 mol.
per mol. chlorohydrin gp. in (II).

USES

The polyetheramines are used as flocking, retention and
dewatering aids in paper prodn.

The aids are prep. without the necessity of having to
graft components used during the condensn. with ethylene
imine.

A(5-J9, 12-W6C) F(5-A6C).

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DETAILS

Pref. ≥35% (II) is condensed with (I) in the absence of
water, neutralised, the rest of (II) added and post-condensed
in the presence of water pref. at pH >8. (I) may be pref.
ethylene diamine or the mixts. with diethylene triamine,
diaminopropylethylene diamine or triethylene tetramine or
propylene diamines. The alcohol in (II) is e.g. propane -
or butane diol.

EXAMPLE

Ethylene diamine (120 pt.wt.) and glycol (320 pt.wt.) were
heated to 85°C and a chlorohydrin ether (318 pt.wt.) prep.
by reacting epichlorohydrin (2565 pt.wt.) with a mixt. of
polyethylene glycol (2716 pt.wt.) with a mol.wt. of 200, BF₃-
hydrate (5.4 pt.wt.) and epichlorohydrin (285 pt.wt.) for 4 hrs
at 70°C, added over 2 hrs. and reacted for 2 hrs. at 145-
155°C. Two 50% solns. (65 pt.wt.) of the chlorohydrin ether
in the glycol was added to the mixt. at an interval of 45 min.
and after 45 min. after the last addition, the mixt. was
neutralised by adding a concntrated aq. NaOH soln. (116 pt.
wt.). The t mp. was decreased to 80°C, water (1090 pt.wt.)
add d and then the chlorohydrin ether (270 pt.wt.) and a
concentrated NaOH soln. (213 pt.wt.) added to maintain the

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soln. at a pH of 10-10.5. The soln. (0.03%) was added to newspaper as a dewatering aid and the mixt. beaten at a pH of 6.8, in an Ultraturrax device (RTM). The paper had a grinding degree of 74°SR.(24pp952).

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